Sai Ramana P B

Full Stack Engineer (Go, Python & React) | Cloud-Native DevOps, AWS & IIoT Systems

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PROFESSIONAL SUMMARY

Full stack engineer with 3+ years building industrial (IIoT) platforms end to end - React/GraphQL frontends, Go/Python backends, and the Kubernetes infrastructure that runs them. Owns the full lifecycle: API and schema design, real-time data pipelines, frontend delivery, and production operations on AWS using Docker, K3s, Helm, ArgoCD, and GitLab CI/CD. Has worked with clients in steel manufacturing, oil & gas, industrial connectivity, and water utilities. Took over full DevOps responsibility after the team's DevOps engineers left, including edge deployments where compute and connectivity are constrained. Monitors production with Prometheus, Grafana, and CloudWatch, and has delivered AI/LLM features including a RAG service and prompt evaluation with token cost tracking.

TECHNICAL SKILLS

Languages:	Python, Go, Java, TypeScript, SQL, Bash
Backend & APIs:	FastAPI, Quarkus, Hibernate ORM, RESTful APIs, GraphQL, WebSocket, Event-driven architecture, NATS, MQTT, API contract design
Frontend:	React, TypeScript, Tailwind CSS, Mantine.js, ECharts, GraphQL client integration, WebSocket real-time UIs
Databases:	PostgreSQL, TimescaleDB, pg_cron, SQLite, SQL (indexing, optimization), Redis, MinIO
Cloud & AWS:	Amazon S3, Amazon EC2, Amazon EKS, Amazon ECR, AWS Lambda, Amazon CloudWatch, Amazon SageMaker, Amazon EventBridge, AWS Glue, Amazon Glacier
CI/CD & DevOps:	GitLab CI/CD, GitHub Actions, Docker, Docker Compose, Kubernetes (K3s), Helm, ArgoCD, Kustomize, Mender OTA, Linux
Observability & Monitoring:	Prometheus, Grafana, Amazon CloudWatch, Monitoring & alerting, Incident response, Root-cause analysis, Production debugging
AI & LLM:	RAG (retrieval-augmented generation), LangChain, Pydantic, Jev (TypeSafe), Prompt evaluation, Token usage & cost tracking, Claude Code, Cursor, OpenAI Codex
Data & Analytics:	Streamlit, Plotly, FPDF2, TensorFlow, Real-time forecasting models

EXPERIENCE

Utthunga Technologies

Bangalore, India

Software Engineer

July 2025 - Present

- Own full stack development (Go/Python backends, React/GraphQL frontends) and end-to-end DevOps for IIoT platforms serving 5-6 enterprise clients across steel manufacturing, oil & gas, industrial networking, and water utility sectors
- Build backend services in Go and Python (FastAPI), using NATS for real-time messaging and TimescaleDB for time-series storage, paired with React frontends consuming GraphQL/WebSocket APIs
- Own AWS infrastructure for client deployments - S3, EC2, EKS, ECR, Lambda, and CloudWatch - including provisioning, deployments, and production operations
- Manage production infrastructure and CI/CD pipelines across multiple client environments using Helm, ArgoCD, Kustomize, and K3s, owning deployment, monitoring, and incident response

- Monitor production systems with Prometheus, Grafana, and Amazon CloudWatch, owning alerting, incident response, and root-cause analysis through to permanent fixes
- Delivered an LLM-backed RAG microservice (LangChain, Pydantic) retrieving context from a production relational database, with retrieval schema-validated and responses typed
- Use TypeSafe Jev typed decision primitives in a recommendation service, and test prompts against fixed evaluation cases while tracking token usage and cost per run to keep inference spend predictable
- Lead migration of Kubernetes-based IIoT deployments to lightweight Docker setups for on-premise edge devices, improving deployability on resource-constrained hardware
- Mentor a junior engineer across both application development and infrastructure practices; hold full infrastructure ownership for assigned client deployments

Associate Engineer Sep 2023 - June 2025

- Engineered RESTful microservices in Java Quarkus (Hibernate ORM) for an Oil & Gas IIoT platform serving multiple enterprise clients
- Developed FastAPI endpoints for AI-based forecasting models running in real time against industrial sensor data
- Wrote GraphQL APIs consumed by a React frontend, with live data delivered over WebSocket from Kepware OPC servers, owning both the API contract and the frontend integration
- Owned SQL schema design and TimescaleDB configuration for time-series data, including pg_cron jobs for scheduled aggregation and cleanup
- Managed and maintained GitLab CI/CD pipelines for backend and frontend across multiple deployment environments

Intern March 2023 - June 2023

- Automated client reporting pipelines using Python and FPDF2; shipped to production
- Created Streamlit + Plotly dashboards for sentiment analysis and image classification projects
- Contributed to a real-time TensorFlow data processing pipeline alongside senior engineers

EDUCATION

PES University • *Master of Computer Applications* Nov 2021 - May 2023
Bangalore, India

Shree Medha Degree and College • *Bachelor of Computer Applications* July 2018 - Sep 2021
Ballari, India

PROJECTS

Edge-to-Cloud IIoT Platform (IT/OT Integration) 2026 - Present

Tech: Go, GraphQL, REST API, React, MQTT, AWS, ArgoCD

- Architected two-way edge-to-cloud communication for an industrial edge device: local HMI and go-edge-controller (linked via local MQTT, alongside firewall/switch/net module/OPEdge) communicate with cloud-side EC-service, BFF, and MFE over an MQTT cloud broker, bridging OT and IT systems
- Own AWS cloud infrastructure end to end for EC-service, BFF (GraphQL API), and MFE (React), deployed via ArgoCD; own deployments, monitoring, and incident response
- Contribute local changes to go-edge-controller as needed alongside primary cloud infrastructure ownership
- Building an automated deployment flow for deploying applications onto OPEdge via the edge controller, replacing a manual process previously handled by the client's operations team

IIoT Platform SaaS (Oil & Gas) 2023 - Present

Tech: Python, FastAPI, Java Quarkus, Hibernate, PostgreSQL, GraphQL, React, K3s, Helm

- Dual-stack backend: FastAPI (Python) for ML model-serving APIs, Java Quarkus for core microservices, both sharing a PostgreSQL + TimescaleDB layer, with a React frontend consuming both over GraphQL
- Designed K3s deployment topology (Helm charts, load balancing, resource limits) across multiple oil & gas client instances

IIoT Platform Application on Edge Device

2025

Tech: Python, Docker, PostgreSQL, TimescaleDB, pg_cron, NATS, Redis, Traefik, Mender, WebSocket, Kepware

- Re-architected a Kubernetes-based IIoT platform into Docker Compose to run on resource-constrained edge hardware
- Designed TimescaleDB schema with pg_cron-driven retention and cleanup jobs for sustained time-series data growth
- Implemented data pipeline: Kepware (OPC-UA) → NATS → backend services → PostgreSQL → WebSocket → dashboard
- Packaged the full stack as a Mender OTA artifact, enabling remote updates to field-deployed devices without physical access

VTS IIoT Platform (Vehicle Tracking System)

2025 - Present

Tech: Go, Python, ReactJS, K3s, MinIO, NATS, Cerbos, Helm, ArgoCD

- Developed real-time fleet tracking platform handling vehicle location updates and event logs for a water utility client, spanning the React frontend and Go/Python backend services
- Designed a Python reporting engine generating scheduled PDF/Excel summaries for fleet operators
- Deployed on K3s via Helm/ArgoCD, with MinIO for object storage and NATS as the event backbone